

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A multi-hop communication system configured by a radio control station connected to a core network and radio stations that relay a signal transmitted from other radio stations, wherein,

the radio control station comprises:

a control signal transmission/reception unit configured to transmit/receive a control signal having a lower bit rate than the information signal and for conducting communication with the radio station;

an information signal transmission/reception unit configured to transmit/receive an information signal; ~~and~~

a communication route determiner configured to determine a communication route for the control signal ~~and~~ independently from a communication route for the information signal ~~by different independent processes~~, and

the radio station comprises:

a control signal transmission/reception unit configured to transmit/receive the control signal; and

an information signal transmission/reception unit configured to transmit/receive the information signal.

Claim 2 (Canceled).

Claim 3 (Currently Amended): A radio control station connected to a core network ~~and controls~~ for controlling communication by a radio station that relays a signals transmitted by other radio ~~station~~ stations, ~~comprises~~ comprising:

a control signal transmission/reception unit configured to transmit/receive a control signal having a lower bit rate than the information signal and for conducting communication with the radio station;

an information signal transmission/reception unit configured to transmit/receive an information signal; ~~and~~

a communication route determiner configured to determine a communication route for the control signal independently from a communication route for the information signal.

Claim 4 (Original): A radio control station according to claim 3, the communication route determiner determines a communication route for the information signal by a different independent process from the determination of the communication route for the control signal.

Claim 5 (Original): A radio control station according to claim 3, the communication route determiner transmits a communication route acquisition request to the radio station for acquisition of a communication route, and the communication route determiner determines a communication route based on a response to the communication route acquisition request transmitted by the radio station.

Claim 6 (Original): A radio control station according to claim 3, further comprising a communication channel controller configured to transmit a usage notification that indicates usage of a communication channel handled by the radio control station.

Claim 7 (Original): A radio control station according to claim 3, the communication route determiner determines a communication route to the radio station and transmits a communication route determination notification that notifies the communication route to a radio station located on the communication route.

Claim 8 (Original): A radio control station according to claim 7, the communication route determiner assigns a communication channel to be used in the radio station located on the determined communication route.

Claim 9 (Currently Amended): A radio station conducting communication via a radio control station connected to a core network, comprising:

a control signal transmission/reception unit configured to transmit/receive the control signal having a lower bit rate than the information signal and for conducting communication with the radio station;

an information signal transmission/reception unit configured to transmit/receive the information signal; and

a communication route determiner configured to determine a communication route for the control signal ~~[[and]]~~ independently from a communication route for the information signal ~~by different independent processes.~~

Claim 10 (Original): A radio station according to claim 9, the communication route determiner transmits a usage inquiry to the radio station for inquiring usage of a communication channel handled by the radio control station and transmits/receives the information signal according to a usage notification that is a response to the usage inquiry.

Claim 11 (Original): A radio station according to claim 9, further comprising a decision unit configured to decide whether or not communication is directly conducted with the radio control station based on a reception level of the control signal received by the control signal transmission/reception unit.

Claim 12 (Original): A radio station according to claim 11, the decision unit changes a threshold for the reception level according to a transmission speed of the information signal and to decide whether or not communication is directly conducted with the radio control station based on a result of comparison of the reception level and the threshold.

Claim 13 (Original): A radio station according to claim 9, further comprising a first relay controller configured to transmit a relay control signal to other station for requesting a relay of the information signal and to set a communication route to the radio control station via the other station according to a response relay control signal that is a response to the relay control signal.

Claim 14 (Original): A radio station according to claim 13, further comprising a communication route selector configured to select a radio station satisfying a prescribed condition regarding a communication state if a plurality of the other radio station transmitted the response relay control signal.

Claim 15 (Original): A radio station according to claim 9, further comprising a second relay controller configured to receive a relay control signal requesting a relay of the information signal from other station, to transmit a response relay control signal that is a response to the relay control signal and to set a communication route from the other radio station to the radio control station.

Claim 16 (Original): A radio station according to claim 15, the second relay controller transmits the response relay control signal notifying ability of the relay of the information signal based on a reception level of the received response relay control signal.

Claim 17 (Original): A radio station according to claim 14, wherein an information indicating a number of hops from the other radio station to the radio control station is included in the response relay control signal, and the communication route selector selects a radio station based the number of hops included in the response relay control signal.

Claim 18 (Original): A radio station according to claim 14, wherein an information indicating an interference level is included in the response relay control signal, and the communication route selector selects a radio station based the interference level included in the response relay control signal.

Claim 19 (Currently Amended): A multi-hop communication method used in a system configured by a radio control station connected to a core network and radio stations that relay a signal transmitted from other radio stations, comprising the steps of:

~~a usage inquiry step that the radio station transmits~~ transmitting a usage inquiry from the radio station for inquiring usage of a communication channel handled by the radio control station using a control signal having a lower bit rate than the information signal and for conducting communication with the radio control station and for conducting communication with the radio station;

~~a communication route determination step that the radio control station determines~~ determining a communication route for the control signal and independently from a communication route for the information signal by ~~different independent processes~~ the radio control station,

~~a usage notification step that the radio control station transmits~~ transmitting from the radio station a usage notification indicating usage of the communication channel handled by the radio control station; and

transmitting/receiving an information signal ~~transmission step that~~ to/from the radio station and the radio control station ~~transmit/receive the information signal~~ using the communication route ~~according to~~ determined based on the usage notification.

Claim 20 (New): A multi-hop communication system according to claim 1, the communication route determiner determines whether or not the communication route for the information signal can be set based on a reception level of the control signal.

Claim 21 (New): A radio control station according to claim 3, the communication route determiner determines whether or not the communication route for the information signal can be set based on a reception level of the control signal.

Claim 22 (New): A multi-hop communication method according to claim 19, in the determining step, whether or not the communication route for the information signal can be set is determined based on a reception level of the control signal.